COUNTY OF LOS ANGELES – DEPARTMENT OF MENTAL HEALTH

OFFICE OF THE MEDICAL DIRECTOR

3.7 PARAMETERS FOR GENERAL HEALTH-RELATED MONITORING AND INTERVENTIONS IN ADULTS

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I. PURPOSE

These monitoring parameters are established to identify specific risk factors and general medical conditions in adult Department of Mental Health (DMH) clients that may require specific educational and behavioral interventions, medication changes, or referral to general healthcare systems.

II. INTRODUCTION

A. Adults with schizophrenia and other serious mental disorders are at a significantly higher risk for a variety of health problems, including:

1. Diabetes
2. Coronary artery disease
3. Hypertension
4. Untoward effects of antipsychotic medications

B. The causes for an increased health risk include:

1. Lifestyle, which is often associated with poor diet, obesity, smoking, substance abuse, decreased activity, and homelessness
2. Social determinants such as poverty, homelessness and social isolation
3. Relatively less access to healthcare
4. Effects of antipsychotic medications
5. Possible genetic predispositions

C. Antipsychotic medications may increase the vulnerability to several general medical conditions.

D. Relevant laboratory studies should be obtained at appropriate intervals for adults in ongoing treatment who have concurrent general medical conditions, health risk factors, or who are receiving medications that require prudent physiologic monitoring by treating mental health professionals. Findings should be documented and addressed in the mental health clinical record.

E. In addition to the studies in D. above, the following parameters are designed to address specific conditions in adults who are taking psychoactive medications.

1. Section III. is related to adults with schizophrenia who are prescribed antipsychotic medication, and addresses the monitoring for:

a. General physiologic status
b. Weight gain and obesity

c. Diabetes
d. Hyperlipidemia
e. Cardiac history
f. Prolactin elevation
g. Sexual side effects

2. Section IV. lists the aspects of routine monitoring for individuals taking antipsychotic medications, which includes a:

    a. Baseline and sequential history in absence of special risks, namely:

        i. Metabolic
        ii. Cardiac
        iii. Sexual

    b. Baseline and yearly laboratory studies

    c. Baseline and yearly physical examinations

3. Section V. lists aspects of routine monitoring for adults prescribed mood-stabilizing medications.

4. Section VI. lists aspects of routine monitoring for adults taking antidepressant medication.

III. MONITORING FOR SPECIFIC CONDITIONS IN ADULTS WITH SCHIZOPHRENIA WHO ARE TAKING ANTIPSYCHOTIC MEDICATION

A. General Physiologic Status

1. Problem: Adults with serious mental disorders are at greater risk for metabolic abnormalities due to poor healthcare, substance abuse, and the exposure to untoward effects of medication.

2. Monitor: At minimum, obtain the following laboratory studies on a yearly basis for all adults in ongoing treatment who are receiving antipsychotic medications from DMH:

    a. CBC
    b. Electrolytes
    c. Glucose Level
    d. BUN
    e. Creatinine
    f. Liver Function Tests
    g. Lipid Panel

3. Intervention(s):

    a. For adults with clinically significant abnormal laboratory values, document both the notification of the primary care physician (PCP) and the consideration of the impact on the mental health service interventions.

b. For adults who refuse laboratory studies, document the refusal and the reasons, the consideration of the risks of further medication services in absence of adequate laboratory monitoring, and the notification of the PCP.

B. Weight Gain and Obesity

1. Problem: Schizophrenia and antipsychotic medications are associated with obesity, leading to an increased risk for general medical problems and impaired self-image and social adjustment.

2. Monitor:

a. For adults who are being started on an antipsychotic medication, measure height, weight, and calculate a Body Mass Index (BMI) (height, weight, BMI) at the baseline. Record weight and BMI at each medication visit for the first three months and then, at least, yearly.

b. Measure and record height, weight, and calculated BMI yearly for all adults with a diagnosis of schizophrenia or who are receiving an antipsychotic medication. (Height need only be measured every 5 years, but should be recorded with each BMI calculation).

c. For adults with a BMI > 25 who are receiving antipsychotic medication, obtain weight and calculate a BMI at each visit.

3. Intervention(s):

a. Choose an antipsychotic medications with less associated weight gain if the BMI > 25, unless the reasons for using an antipsychotic more associated with weight gain despite current obesity, are clearly documented in the clinical record.

b. When the baseline BMI increases by 1 or more over the initial value, counsel about modifiable risk factors and refer to health living groups, and change to an antipsychotic medication with less associated weight gain if clinically feasible. If not feasible, document the reason.

C. Diabetes

1. Problem: Obesity, newer antipsychotic medications, and inactivity associated with schizophrenia increase the risk for diabetes mellitus type II.

2. Monitor:

a. Obtain a baseline and yearly fasting blood sugar (FBS) or hemoglobin A1c (HA1c) for all adults taking an antipsychotic medication.

b. For BMI >25, obtain a HA1c or FBS 4 months after the initiation of an antipsychotic medication, and repeat at least yearly.

c. Ask about diabetes symptoms at least every 6 months, i.e., weight change, polyuria and polydipsia and record the client's responses in the clinical record.

d. For clients who have a FBS >126 or a random FBS>200 or HA1c > 7%, refer to the PCP and obtain follow up lab studies at 3 month intervals if findings remain elevated.

3. Interventions(s):

a. For clients who report symptoms of diabetes, obtain a FBS or a HA1c. Refer to the PCP for a FBS >126, a random FBS>200 or a HA1c > 7%.

b. Urge adults with symptoms of diabetes to seek general health care services, counsel about modifiable risk factors, and refer to healthy living groups.

c. For adults who are taking an antipsychotic medication and have a FBS >126, a random blood sugar >200 or a HA1c > 7.0%, change to a different antipsychotic medication to decrease the likelihood that the laboratory findings are medication-induced, if clinically indicated. If not clinically indicated, document the reason. Monitor every three months as necessary.

D. Hyperlipidemia

1. Problem: Antipsychotic medications are associated with hyperlipidemia and hypercholesterolemia, which increases the risk for cardiovascular disease.

2. Monitor:

a. Obtain a baseline and yearly lipid panel (total and HDL and LDL cholesterol, triglycerides) for adults with a diagnosis of schizophrenia or who are taking an antipsychotic medication.

b. Obtain a repeat lipid panel every 6 months for a LDL cholesterol level >130, a total cholesterol level >200, or a triglycerides level >150.

3. Intervention(s):

a. Refer adults to their PCP for an LDL cholesterol >130 for consideration of cholesterol-lowering drugs.

b. Initiate lifestyle counseling for weight loss, diet change, and exercise if the LDL cholesterol is > 130.

E. Cardiac History

1. Problem: Some antipsychotic medications cause EKG changes (QTc interval prolongation) that increase the risk of fatal arrhythmias.

2. Interventions:

a. Obtain a cardiac history, including a history of:

i. Heart disease

ii. Syncope
iii. A family history of sudden death or prolonged QTc.

b. Consider the effect of any QTc prolonging medications (e.g.) tricyclic antidepressants) or possible medication interactions when prescribing an antipsychotic medication known to cause EKG changes.

c. Refer clients with a positive cardiac history for a baseline EKG prior to initiating ziprasidone. If there is evidence of syncope or other signs of QTc prolongation after the initiation of ziprasidone, an EKG should be repeated.

d. Do not prescribe thioridazine, mesoridazine or pimozide in adults with a positive cardiac history.

F. Prolactin and Sexual Side Effects

1. Problem: Some antipsychotic medications (especially 1st generation antipsychotics and risperidone) raise prolactin levels (75% women, 34% men), which may cause galactorrhea, menstrual irregularities, sexual dysfunction, and osteoporosis.

2. Monitor: For adults taking an antipsychotic medication, take a yearly sexual history, which includes asking about:

a. Changes in menstruation
b. Changes in libido
c. Galactorrhea
d. Erectile and ejaculatory dysfunction

3. Intervention(s):

a. When the history suggests sexual dysfunction, obtain a prolactin level.

b. Switch to a prolactin-sparing antipsychotic medication (e.g., olanzapine, clozapine, quetiapine, and ziprasidone) if there is a history of sexual dysfunction and the prolactin level is elevated.

c. Refer to a general medical resource for an endocrine workup if a sexual dysfunction and elevated prolactin level persists after the switch to a prolactin-sparing antipsychotic medication.

IV. ROUTINE MONITORING FOR INDIVIDUALS TAKING ANTIPSYCHOTIC MEDICATIONS

A. Baseline and Sequential History in Absence of Special Risks

1. Metabolic: At least every six months, ask about diabetes symptoms, e.g., weight change, polyuria, polydipsia, and record the responses in the clinical record.

2. Cardiac:

    a. Obtain a cardiac history, including a history of:
        i. Heart disease
        ii. Syncope
        iii. A family history of sudden death or prolonged QTc.

    b. Consider the effect of any QTc prolonging medications (e.g. tricyclic antidepressants) or possible medication interactions when prescribing an antipsychotic medication known to cause EKG changes.

    c. Refer clients with a positive cardiac history for a baseline EKG when initiating ziprasidone. If there is evidence of syncope or other signs of QTc prolongation after the initiation of ziprasidone, the EKG should be repeated.

3. Sexual: For adults taking antipsychotic medication, take a yearly sexual history, which includes:

    a. Changes in menstruation
    b. Changes in libido
    c. Galactorrhea
    d. Erectile and ejaculatory dysfunctions

B. Obtain baseline and yearly laboratory studies which include:

1. CBC
2. Electrolytes
3. Glucose level
4. BUN
5. Creatinine
6. Liver function tests
7. Lipid panel
8. FBS or HA1c

C. Obtain baseline and yearly physical examination which includes:

1. Height measurement, baseline weight, and calculated BMI at baseline,

2. Weight measurement and BMI at each medication visit for first 3 months, then at least yearly. (Height need only be measured every 5 years, but should be recorded with each BMI calculation.)

V. ROUTINE MONITORING FOR INDIVIDUALS TAKING MOOD-STABILIZING MEDICATIONS:

General Testing: The general laboratory monitoring of individuals taking mood stabilizing medications should be determined by the clinical situation, including the type of medication, health risk factors, the duration of treatment, concurrent general medical conditions and concurrent medications.

A. Lithium

1. Prior to the initiation of lithium treatment, the following baseline laboratory data should be obtained:

   a. Electrolytes
   b. Creatinine
   c. Pregnancy status
   d. Thyroid function (e.g., TSH)

2. An EKG should be obtained in individuals with a history of cardiac abnormalities or syncope.

3. A plasma lithium level should be closely monitored during the initiation of lithium to ensure therapeutic levels and avoid dose-related toxicity.

4. A plasma lithium level should be monitored at least every 6 months in individuals stabilized on lithium.

5. A creatinine level and TSH level should be monitored at least every six months to one year in individuals stabilized on lithium.

B. Divalproex

1. Prior to the initiation of divalproex, a CBC, liver enzymes and a pregnancy status should be obtained.

2. Liver function tests should be obtained at one and two months following the initiation of divalproex and at least every 6 months in individuals stabilized on divalproex, in order to avoid dose-related toxicity and ensure therapeutic levels.

C. Carbamazepine

1. Prior to the initiation of carbamazepine, a CBC and liver enzymes should be obtained.

2. Liver function tests, electrolytes and a CBC should be obtained at one and two months following the initiation of carbamazepine and at least every six months in individuals stabilized on carbamazepine in order to avoid dose-related toxicity and to ensure therapeutic levels.

VI. ROUTINE MONITORING FOR INDIVIDUALS TAKING ANTIDEPRESSANT MEDICATIONS:

A. The laboratory monitoring of individuals taking antidepressant medications should be determined by the clinical situation, including the type of medication, health risk factors, the duration of treatment, concurrent general medical conditions and concurrent medications.

B. A baseline EKG should be obtained prior to treatment with tricyclic antidepressants in individuals with cardiac disease or who are over age 55.

VII. REFERENCES:

A. BMI calculators:

1. National Heart and Lung and Blood Institute: http://www.nhlbi.nih.gov/guidelines/obesity/BMI/bmicalc.htm

2. CDC: http://www.cdc.gov/nccdphp/dnpa/bmi/calc-bmi.htm

B. Marder SJ, Essock SM, Miller AL, Buchanan RW, Casey DE, Davis JM, Kane JM, Lieberman JA: Physical health monitoring of patients with schizophrenia. Am J Psychiatry 2004;161:1334-49